CASESTUDY winner

U.S. Department of Transportation
Federal Highway Administration

The Federal Highway Administration (FHWA) is an agency within the U.S. Department of Transportation that supports State and local governments in the design, construction, and maintenance of the Nation's highway system (Federal Aid Highway Program) and various federally and tribal owned lands (Federal Lands Highway Program).

Through financial and technical assistance to State and local governments, the Federal Highway Administration is responsible for ensuring that America's roads and highways continue to be among the safest and most technologically sound in the world.

Trent Pell, GIS manager

Project Summary

Company
Madison County Council

Market
Safety compliance

Location
Indiana / USA (50 states)

Identify ⇨Track⇨ Control
idtracon
Rugged Metal Barcode & RFID labels

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Keeping Tabs on Traffic Signs

Using barcodes to comply with new traffic sign design and installation standards.

Opportunity: easily identify the location and condition of traffic signs

In January 2012, all 50 USA states and the communities within them are required by the United States Department of Transportation's Federal Highway Administration to have a plan for bringing their traffic signs into compliance with the agency's Manual on Uniform Traffic Control Devices, an 800-page volume of standards for the design, installation and use of traffic signs, road surface markings and signals.

Only 20 states have adopted the standards to date, so there is much work to be done to bring the uniformity that is expected to help reduce crashes, improve transportation efficiency and reduce cost through standardisation.

The planning is especially challenging for the communities who don't already have an inventory of their signage. Identifying the location and condition of thousands of signs is a big project for any city, and it's an early step toward compliance with the new traffic sign standards.

In Indiana, 16 communities faced this situation head on, putting Madison County Council of Governments GIS manager Trent Pell in charge of a team with the responsibility to locate and catalogue all signs prior to the January deadline.

"We started in July 2010 and plan to meet the deadline," said Trent Pell.

Solution: barcodes enabled quick identification of traffic signs

Trent Pell's approach is straightforward: get signage data into their web-based GIS system for shared ongoing management with individual municipal jurisdictions.

His team started with no inventory or location data, and no system for collecting it. And data creation is no small task given the number of street signs and the need to measure retro-reflectivity.

Trent Pell bought two sets of hardware, including RoadVista reflectometers, to take to the streets.

Each sign the team locates on the roadside is assigned a number from a ***METAL****craft* tabbed metal barcode nameplate engineered for outdoor durability, withstanding UV rays, moisture and other forces for the life of the street sign. That nameplate's unique identification number is linked to the sign's location and reflectivity data using ESRI ArcPad software.

When the inventory is complete, the Madison County Council of Governments will be able use their digital inventory to meet the next deadlines established by the FHWA – replacing regulatory, warning and post-mounted guide signs that fail to meet established minimums by January 2015 and replacing overhead guide and street name signs that fail by January 2018.

They'll also be immediately able to work more efficiently with sign installation, replacement and maintenance, aided by barcodes. Street signs get damaged, stolen or worn out even without new federal mandates.

Result: tabbed barcodes half the label processing time

Trent Pell's team manages to inventory about 200 signs per day, a number that might be higher if he could get his GPS data to travel via Bluetooth wirelessly to the handheld unit. "We learn as we go," said Trent Pell. "We're entering GPS data manually right now, and I've filed two bug reports with ESRI. Keeping data clean is the priority."

METAL*craft'* developed a nameplate with a breakaway tab in early 2011 for easier adhesive liner removal which is cutting the labelling process time in half to help municipalities scrambling to comply with new federal requirements.

"***METAL****craft's tabbed barcode nameplate is the simplest part of the project,"* said Trent Pell. *"The tabs make it much easier."*

Contact Peter Laws for more information on idtracon's barcode and RFID custom solutions.